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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,041	02/13/2004	Maryellen L. Giger	248939US20	3848
22850	7590	07/23/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
			EXAMINER WOLDEMARIAM, AKILILU K	
			ART UNIT 2609	PAPER NUMBER
			NOTIFICATION DATE 07/23/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

# Office Action Summary

Application No.

10/777,041

Applicant(s)

GIGER ET AL.

Examiner

Aklilu k. Woldemariam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ~
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date May 10, 2004. ~
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on May 10, 2004 was filed after the mailing date of the same on May 10, 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

### *Claim Rejections - 35 USC § 101*

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. **Claim 21** is rejected under 35 U.S.C. 101 because the claimed invention is not supported by computer readable medium. No physical transformation or particular use of a computer program product storing instructions for execution on a computer system. The result (a computer program product storing instructions for execution on a computer system) is useful (establishes the specific, substantial and credible utility of storing instructions for execution on a computer system) only if at least made available for use in the disclosed practical application, concrete if the storing instructions for execution on a computer system is based on objective criteria, and tangible if it is more than just a thought or a computation within a processor, instead being a real world result. In this stance, claim 21 does not appear to produce a tangible result such that the usefulness of storing instructions for execution on a computer system. It, therefore, appears to be non-statutory.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-30** are rejected under 35 U.S.C. 102(b) as being anticipated by Jiang et al., hereinafter, Jiang (U.S. Publication number 2002/0196966A1).

**Regarding claim 1**, Jiang discloses a method for a computerized analysis of a texture of image data (see column 2, paragraph [0019] line 2), comprising extracting features from the image data (see column 4, paragraph [0055] lines 1-5); applying the extracted features to a classifier (see column 4, paragraph [0060] line 1); and determining a fractal characteristic of the image data based on an output of the classifier (see column 3, paragraph [0054] line 19).

**Regarding claim 2**, Jiang discloses the method according to Claim 1, further comprising associating the fractal characteristic BMD with a risk of a disease (see column 1, paragraph [0003] lines 5-6 and paragraph [0007], lines 6-7).

**Regarding claim 3**, Jiang discloses the method according to Claim 1, wherein the extracting (see column 2, paragraph [0022] lines 6-7) step comprises determining the features at multiple scales (see column 2, paragraph [0022] lines 6-7).

**Regarding claim 4**, Jiang discloses the method according to Claim 1, wherein the extracting step comprises determining the features from an area of a region of interest

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of the image data (see column 3, paragraph [0030] lines 4-6) based on a box-counting method (i.e. box-counting method is pixel counting).

**Regarding claim 5**, Jiang discloses the method according to Claim 1, wherein the extracting step comprises determining the features from a volume of a region of interest of the image data (see column 7, paragraph [0090] and [0092]) based on a general Minkowski model.

**Regarding claim 6**, Jiang discloses the method according to Claim 1, wherein the applying step comprises applying the features to a linear discriminant analysis (see column 4, paragraph [0055] lines 9-10).

**Regarding claim 7**, Jiang discloses the method according to Claim 1, wherein the applying step comprises applying the features to an artificial neural network (see column 1, paragraph [0003] line 10).

**Regarding claim 8**, Jiang discloses the method according to Claim 1, wherein the determining step comprises calculating a fractal dimension (see column 7, paragraph [0090]) from a slope (column 8, paragraph [0093] lines 5-7).

**Regarding claim 9**, the method according to Claim 1, wherein the determining step comprises calculating a fractal dimension from at least two slopes (see column 7, paragraph [0090]) and column 8, paragraph [0093] lines 5-7).

**Regarding claim 10**, Jiang discloses the method according to Claim 1, wherein the determining step comprises determining a multi-fractal characteristic of the image data (see column 2, paragraph [0022] lines 6-7).

**Regarding claim 11**, Jiang discloses a system configured to process image data to determine a fractal characteristic of the image data, comprising a feature extraction mechanism that extracts features from the image data (see column 16, claim 64); a classifier mechanism that applies the extracted features to a classifier (see column 4, paragraph [0060]; and a fractal determination mechanism that determines a fractal characteristic of the image data based on an output of the classifier mechanism (see column 16, claim 64).

**Regarding claim 12**, Jiang discloses the system according to Claim 11, further comprising: a fractal association mechanism that associates the fractal characteristic to a risk of a disease (see column 1, paragraph [0002] lines 5-6 and paragraph [0005], lines 6-7).

**Regarding claim 13**, Jiang discloses the system according to Claim 11, wherein the feature extraction mechanism extracts (see column 16, claim 65) the features at multiple scales.

**Regarding claim 14**, Jiang discloses the system according to Claim 11, wherein the feature extraction mechanism extracts the features from an area of a region of interest of the image data (column 16, claim 61) based on a box-counting method.

**Regarding claim 15**, Jiang discloses the system according to Claim 11, wherein the feature extraction mechanism extracts the features from a volume of a region of interest of the image data (column 7, paragraph [0092]) based on a general Minkowski model.

**Regarding claim 16**, Jiang discloses the system according to Claim 11, wherein the classifier mechanism applies the features to linear discriminant analysis (see column 4, paragraph [0055] lines 9-10).

**Regarding claim 17**, Jiang discloses the system according to Claim 11, wherein the classifier mechanism applies the features to an artificial neural network (see column 4, paragraph [0055] lines 9-10).

**Regarding claim 18**, Jiang discloses the system according to Claim 11, wherein the fractal determination mechanism calculates a fractal dimension from a slope (see column 17, claim 66).

**Regarding claim 19**, Jiang discloses the system according to Claim 11, wherein the fractal determination mechanism calculates a fractal dimension from at least two slopes (see column 10, paragraph [0115] lines 1-3).

**Regarding claim 20**, Jiang discloses the system according to Claim 11, wherein the fractal determination mechanism determines a multi-fractal characteristic of the image data (see column 10, paragraph [0115] line 3).

**Regarding claim 21**, Jiang discloses a computer program product storing instructions for execution on a computer system, which when executed by the computer system (see column 11, paragraph [0119], causes the computer system to perform a method comprising the steps of extracting features from the image data (see column 15, claim 38); applying the extracted features to a classifier (see column 4, paragraph [0060]); and determining a fractal characteristic of the image data based on an output of the classifier ( see column 15, claim 38).

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**Regarding claim 22**, Jiang discloses the computer program product according to Claim 21, wherein the method further comprises associating the fractal characteristic with a risk of a disease (see column 1, paragraph [0002] lines 5-6 and paragraph [0005], lines 6-7).

**Regarding claim 23**, Jiang discloses the computer program product according to Claim 21, wherein the extracting step comprises: determining the features at multiple scales (see column 10, paragraph [01115] line 3)

**Regarding claim 24**, Jiang discloses the computer program product according to Claim 21, wherein the extracting step comprises determining the features from an area of a region of interest of the image data (see column 3, paragraph [0030] lines 4-6) based on a box-counting method.

**Regarding claim 25**, Jiang discloses the computer program product according to Claim 21, wherein the extracting step comprises determining the features from a volume of a region of interest of the image data (see column 7, paragraph [0092]) based on a general Minkowski model.

**Regarding claim 26**, Jiang discloses the computer program product according to Claim 21, wherein the applying step comprises applying the features to linear discriminant analysis (see column 4, paragraph [0055] lines 7-8).

**Regarding claim 27**, Jiang discloses the computer program product according to Claim 21, wherein the applying step comprises applying the features to an artificial neural network (see abstract, lines 14-15)



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**Regarding claim 28**, Jiang discloses the computer program product according to Claim 21, wherein the determining step comprises calculating a fractal dimension from a slope (see column 8, paragraph [093] lines 5-7).

**Regarding claim 29**, Jiang discloses the computer program product according to Claim 21, wherein the determining step comprises calculating a fractal dimension from at least two slopes (see column 10, paragraph [0115] lines 1-2).

**Regarding claim 30** Jiang discloses the computer program product according to Claim 21, wherein the determining step comprises determining a multi-fractal characteristic of the image data (see column 10, paragraph [0115] line 3).

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aklilu k. Woldemariam whose telephone number is 571-270-3247. The examiner can normally be reached on Monday-Thursday 6:30 a.m-5:00 p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Alexander Eisen  
SPE  
Art Unit 2609

A.W.  
7/10/07